AMENDMENT(S) TO THE SPECIFICATION

Please replace the paragraph beginning at page 1, line 12, which was previously amended in the Preliminary Amendment dated August 9, 2006, with the following rewritten paragraph:

An automatic gearbox for a vehicle is typically controlled by an ECU (electronic control unit), which controls gear selection so as to achieve an engine operation considered appropriate. A number of parameters may be considered when determining an initiation of gear change. Such parameters suitably comprise the vehicle speed, which is calculated as a function of e.g. the speed of a propeller shaft for the driven wheels. A method and apparatus for automatically controlling gear selection, wherein the speed of the propeller shaft is measured, is described in U.S. Patent No. 6,480,776. An alternative known in the art for calculating the vehicle speed for determination of a gear change utilizes a sensed value of the engine speed or the crankshaft speed in combination with a current gear ratio between the speed of a gearbox input shaft and a gearbox output shaft/propeller shaft. Another alternative would be to utilize the rate of rotation of the wheels, which may be retrieved from wheel speed sensors adjacent to [[the]] each one of the wheels, respectively. However, processed signals from such wheel-speed sensors are generally inferior to the quality provided by a speed sensor for e.g. the propeller shaft and are therefore not used when calculating the vehicle speed.

Please replace the paragraph beginning at page 2, line 17, with the following rewritten paragraph:

On e.g. a tractor and semi-trailer ~~eqipage~~ equipage, the tractor has a front wheel axle and a rear wheel axle, wherein the rear wheel axle is the driving axle. During a retarding motion, the front wheel axle is exerted to a higher force than the rear wheel axle. Therefore while braking, incipient lockup of the driven wheels occurs earlier and more often than incipient lockup of the non-driven wheels on the front wheel axle. Incipient lockup of the rear wheels before lockup of the front wheels naturally occurs also for vehicles having all wheels driven. Hence the ABS system controls the braking of the rear wheels more actively than the braking of the front wheels. The involvement of the ABS system also disturbs the accuracy of the calculated value of the vehicle speed, since the propeller shaft speed or any of its alternatives is affected by the ABS

system. Thus a similar problem to the one described above regarding a gear change when the driven wheels are spinning may arise also when the ABS controls the wheel brakes.

Please replace the paragraph beginning at page 5, line 9, with the following rewritten paragraph:

In one embodiment the electronic control unit is a gearbox electronic control unit. Hereby is achieved that the gearbox electronic control unit itself ~~determine~~ <u>determines</u> the vehicle speed.

Please replace the paragraph beginning at page 6, line 1, with the following rewritten paragraph:

Fig. 1 shows a schematic block diagram of a vehicle 1, such as a bus and a truck, comprising a motor 2 for propelling the vehicle, such as an internal combustion engine, a hybrid motor and an electric motor. The motor 2 is connected to an input shaft for a gearbox 3 via a clutch arrangement 4. A motor torque is thus transmitted to a propeller shaft 5 via the gearbox 3 and the propeller shaft 5 further transmits the motor torque to rear, driven wheels 6 via a differential 7 and corresponding half shafts 8. The vehicle 1 also comprises at least one front axle 9 with at least two non-driven wheels 10. A motor ECU 11 is arranged for controlling the motor 2, a gearbox ECU 12 is arranged for controlling inter alia the clutch arrangement 4 and the gearbox 3 and an ABS/TCS-ECU 13 is arranged for controlling the wheel brakes (not shown) for each one of the driven wheels 6 and non-driven wheels 10. The motor ECU 11, the ABS/TCS-ECU 13 and the gearbox ECU 12 are able to communicate with each other via a vehicle internal network bus 14, e.g. a bus compatible with CAN (Controller Area Network), TTCAN (Time-triggered Controller Area Network) and/or FlexRay. The ABS/TCS-ECU 13 belongs to an ABS and a TCS, wherein the TCS can be said to be an extension of the ABS in the sense that the TCS comprises the same hardware as the ABS: wheel-speed sensors 15 for each one of the wheels, the wheel brakes and [[an]] <u>a</u> hydraulic modulator (not shown) located between the ABS/TCS-ECU 13 and the wheel brakes. The hardware and software of the ABS and TCS as well as their functions are known to a person skilled in the art and are therefore not described more in detail.

Please replace the paragraph beginning at page 6, line 24, with the following rewritten paragraph:

At least one speed sensor 16 for sensing the speed of rotation of the propeller shaft 5 is in this embodiment connected to the gearbox ECU 12. The purpose of the speed sensor 16 is to receive a value used by the gearbox ECU 12 to calculate a vehicle speed. The vehicle speed is then used as an input parameter in a calculation to determine if an automatic gear change shall be initiated by the gearbox ECU 12. Different calculation methods involving the vehicle speed for determining if an automatic gear change shall be initiated are known to a person skilled in the art and are not as such part of this invention. Such calculation methods are therefore not described more in detail. The speed sensor 16 may of course be connected to another ECU than the gearbox ECU 12 as long as the gearbox ECU 12 is able to retrieve the value, e.g. via the vehicle internal network bus 14. The calculation of the vehicle speed is according to the invention also not limited to be processed by the gearbox ECU 12, but may be processed by another ECU, such as the ABS/TCS-ECU 13, directly or indirectly connected to the vehicle internal network bus 14. Although not shown in any drawings, instead of arranging the speed sensor 16 adjacent to the propeller shaft 5, the speed sensor may be positioned for sensing the speed of rotation of a fly wheel, a crankshaft, an apparatus directly driven by the motor 2, such as an alternator, and/or the input shaft for the gearbox. A calculation of the vehicle speed based on the speed of rotation for these three elements [[are]] <u>is</u> similar to the calculation based on the speed of rotation of the propeller shaft 5 and is known to a person skilled in the art.

Please replace the paragraph beginning at page 7, line 14, with the following rewritten paragraph:

The vehicle 1 may receive positioning data from a positioning system in order to, inter alia, determine a geographical position and velocity/speed of the vehicle 1. Examples of positioning systems are GPS (Global Positioning System), differential GPS, Glonas, Orbcomm and Gallileo. The use of positioning systems for determining a vehicle position is in itself known in the art, and will therefore not be described in detail. In the embodiment shown in Fig 1, a positioning system unit in the form of a GPS signal receiving and processing unit is connected to the vehicle internal network bus 14, but may be comprised in the gearbox ECU 12 or any other ECU

connected to the vehicle internal network bus 14. The GPS signal receiving and processing unit is in this embodiment adapted to calculate an instantaneous speed for the vehicle based on the received signals from satellites and, in case of a differential GPS, base stations. Such a receiver and processing unit [[are]] is known to a person skilled in the art and is therefore not described in detail. Alternatively this calculation of the vehicle speed may be performed by the gearbox ECU 12 or any other ECU based on the signals received from the satellites and base stations.

Please replace the paragraph beginning at page 7, line 30, with the following rewritten paragraph:

The vehicle also comprises a vehicle radar system 18, which is as such known in the art, connected to the vehicle internal network bus 14. Such a vehicle radar system 18 may be ~~utilised~~ utilized by e.g. ACC-systems (Adaptive cruise control systems) and the vehicle radar system 18 also calculates a vehicle speed.

Please replace the paragraph beginning at page 8, line 4, with the following rewritten paragraph:

An example of an ECU according to the invention, in this embodiment the gearbox ECU 12, is schematically disclosed in Fig. 2. The gearbox ECU 12 here comprises a processing means 19 connected to a first port 201 in order to enable communication with other ECUs, such as the ABS/TCS-ECU 13 via the vehicle internal network bus 14, a second port 202 for communications with actuator means (not shown) for the clutch arrangement 4, a third port 203 for communication with actuator means (not shown) for the gearbox 3, and a fourth port 204 for receiving signals from the speed sensor 16. The processing means is also connected to at least one computer program product in the form of a storing means 21, such as a hard disk, a flash memory, a ROM (Read-only memory), an EPROM (Erasable Programmable ROM) or an EEPROM (Electrically Erasable Programmable ROM). The storing means in this embodiment comprises inter alia a computer program for gear shift control. This computer program comprises determining means in the form of a computer program (programme module) ~~for determining a vehicle speed~~ gear shift control 22 and calculating means in the form of a computer program for vehicle speed calculation 23. In accordance with what is said above in

conjunction with Fig 1, the computer program for vehicle speed calculation 23 is as such known in the art and may alternatively or in addition be installed in another ECU connected to the vehicle internal network bus 14.

Please replace the paragraph beginning at page 9, line 17, with the following rewritten paragraph:

In step S3 the computer program for vehicle speed calculation 23 causes the gearbox ECU 12 to calculate an instantaneous vehicle speed based on the signals from the speed sensor 16. Such a calculation is known to a person skilled in the art and is therefore not described in detail. After step S3 the method continues with a fifth step S5, in which the calculated vehicle speed of step S3 is used as an input parameter in a calculation for determining if a gear change shall be initiated. Such a calculation is processed by the gearbox ECU 12 through the computer program for gear shift control 22. After step S5 the method returns to step S1. [[Tthe]] <u>The</u> vehicle speed and the current gear ratio makes it possible to calculate the engine speed, which in turn is used to determine which gear that preferably should be activated in respect of e.g. economical driving. The computer program for gear shift control may e.g. adapt the gearbox ECU 12 to choose a gear according to a preferred engine speed after a gear shift considering the current vehicle speed.